Abstract Submitted
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**Post-perovskite transition and magnetic and charge transport properties of the correlated 4*d* post-perovskite $CaRhO_3$** K. YAMAURA, Y. SHIRAKO, H. KOJITANI, M. ARAI, D.P. YOUNG, M. AKAOGI, M. NAKASHIMA, T. KATSUMATA, Y. INAGUMA, E. TAKAYAMA-MUROMACHI — A high-quality polycrystalline sample of the correlated 4*d* post-perovskite $CaRhO_3$ ($Rh^{4+}$: $4d^5$ $S = 1/2$) was attained under a moderate pressure of 6 GPa for the first time. It is obvious that the perovskite $CaRhO_3$ transforms into a layered phase, in which $RhO_6$ octahedra are connected by shearing the edge along a-axis and the corner along c-axis. The Rh-O layer stacks up alternatively with the Ca layer along b-axis. The characteristic structure suggests an electronic anisotropy toward 2D, which may be essential for unusual magnetism. The sample was subjected for measurements of charge transport and magnetic properties. The data clearly indicate it goes into an antiferromagnetically ordered state below $\sim 90$ K in an unusual way, being a strikingly contrast to what was observed for the perovskite phase.

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